EXHIBIT L

82 1634   **ETHICON**   cc: Mr. E. Block
INC.   to
                                  Dr. B. Schwartz
SOMERVILLE . NEW JERSEY   Dr. E. Borysko
June 15, 1982   Mr. P. K. Hopper
                                  Dr. R. Kronenthal
                                       to
To: Dr. A. J. Melveger   Dr. A. J. Levy
                                  Mr. P. T. Makris
                                  Dr. J. McDivitt
                                  RDCF

Subject: CRACK DEPTH IN EXPLANTED
PROLENE* POLYPROPYLENE SUTURES

A study was carried out of all available SEM photographs of explanted
PROLENE sutures, to determine best estimates for the penetration depth
of surface cracks. The micrographs were taken in 1981; the explants
themselves are no longer available. SEM photographs examined were as
follows:

Photo #	Date	Source of PROLENE Explants
5853-5874	7/27/81	ERF #81-266, sizes 4-0 and 5-0, cardio-vascular implants, 5 and 7½ years implantation time.
5627-5641	3/2/81	R. C. Drews, M.D. Size 10-0.
5767-5789	6/18/81	Ophthalmic implants, 2 months through 4½ years implantation time.

The 10-0 sutures showed surface cracks after 1-2 years implantation;
the larger sutures after 7½ years but not at 5 (although cracks could
be induced by abrasion on the 5 year explant, as previously reported
by Dr. Borysko). Of those micrographs exhibiting surface cracks,
three showed a clear, edge-on view of the cracked surface layer, per-
mitting an accurate measurement of crack depth. Seven micrographs
showed oblique views of cracks, from which only an estimate ($\pm$ 50%)
of depth could be obtained. The data from all ten micrographs are
shown in Table I.

The 10-0 sutures have crack depths of 0.5 to 2 µm; the suture diameter
is 25 µm. Crack depth does not vary systematically with implantation
time; it does vary significantly from point to point along the fiber
length in both the 10-0 and the 4-0 sutures.

Anthony C. Lunn, Ph.D.

ETHICON, INC.

JUN 2 5 1982

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Attachment

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TABLE I

Crack Depth in PROLENE Explants

Explant Specimen	Suture Size	In vivo Time Yr	SEM Photo #	Magnif.	Crack depth μm
ERF #81-266 (cardiovascular)	4-0	$7\frac{1}{2}$	5872	2000 X	4.5^*
			5873	2000 X	4^*
			5874 A/B	2000 X	$2-4^*$
From Dr. R. C. Drews:					
A. Belikopitsky	10-0	2	5769	1000 X	$1-1.5^+$
E. Lucksinger	10-0	3	5783	$\sim$1700 X	1^+
A. Karchmer	10-0	$3\frac{1}{2}$	5780	1000 X	1.5^+
			5781	1000 X	2^+
Baum	10-0	$4\frac{1}{2}$	5633	2000 X	$0.5-0.8^+$
			5637	2000 X	$0.5-0.8^+$
			5641	1000 X	2^+

* Edge-on view of cracks
+ Oblique view of cracks